

*In the Claims*

The status of claims in the case is as follows:

1       1. [Previously presented] A method for control and  
2       management of communication traffic, comprising the steps  
3       of:

4               expressing access rules as filters referencing system  
5               kernel data;

6               for outbound processing, determining source application  
7               indicia;

8               for inbound packet processing, executing a look-ahead  
9               function to determine target application indicia; said  
10          look-ahead function being executed within a protocol  
11          stack including an IP layer, a transport layer, a  
12          sockets layer, and an application layer and which, for  
13          said inbound packet, said IP layer provides to said  
14          transport layer said inbound packet, marked as non-  
15          deliverable, and receives back from said transport  
16          layer indicia, provided to said transport layer by said

17       sockets layer, identifying the application layer  
18       application to which said packet would have been  
19       delivered; and

20       responsive to said source or target application  
21       indicia, executing filter processing; said filter  
22       processing including constructing and evaluating  
23       logical expressions of arbitrary length, and  
24       selectively using a set of logical operators,  
25       alternative filter selector fields, and value set.

1       2. [Currently amended] The method of claim 1, wherein  
2       said protocol stack is a TCP/IP protocol stack, and further  
3       comprising the steps of executing said determining and  
4       executing steps within a kernel filtering function upon  
5       encountering a filter selector field referencing kernel data  
6       not included in said packet.

1       3. [Currently amended] The method of claim 1, wherein  
2       said protocol stack is a TCP/IP protocol stack, and said  
3       filter processing including the steps of:

4           determining a task or thread identifier;  
5           based on said task or thread identifier, determining a

6 process or job identifier; and

7 based on said process or job identifier, determining  
8 job or process attributes for filter processing.

1 4. [Currently amended] The method of claim 1, wherein  
2 said protocol stack is a TCP/IP protocol stack, and said  
3 filter processing including the steps of:

4 determining a user identifier; and

5 based on said user identifier, determining user  
6 attributes for filter processing.

1 5. [Original] The method of claim 3, further comprising  
2 the step of determining from said task identifier a work  
3 control block containing said process or job identifier.

1 6. [Canceled]

2 7. [Canceled]

1 8. [Currently amended] The method of claim 1, wherein  
2 said protocol stack is a TCP/IP protocol stack, and further

3 comprising the steps of:

4 delivering to said filters infrastructure access rules  
5 for defining security context.

1 9. [Original] The method of claim 8, said infrastructure  
2 including logging, auditing, and filter rule load controls.

1 10. [Previously presented] A method for control and  
2 management of aspects of communication traffic within  
3 filtering, comprising the steps of:

4 receiving IP packet data into a TCP/IP protocol stack  
5 executing within a system kernel;

6 for an inbound IP packet, executing a look-ahead  
7 function within a protocol stack including an IP layer,  
8 a transport layer, a sockets layer, and an application  
9 layer and which, for said IP inbound packet, said IP  
10 layer provides to said transport layer said inbound IP  
11 packet, marked as non-deliverable, and receives back  
12 from said transport layer indicia, provided to said  
13 transport layer by said sockets layer, identifying the  
14 application layer application to which said packet  
15 would have been delivered; and

16           executing filtering code within said system kernel with  
17           respect to non-IP packet data accessed within said  
18           system kernel outside of said TCP/IP protocol stack;  
19           said filtering code constructing and evaluating logical  
20           expressions of arbitrary length, and selectively using  
21           a set of logical operators, alternative filter selector  
22           fields, and value set.

1       11. [Original] The method of claim 10, said non-IP packet  
2       data including context data regarding said IP packet.

1       12. [Original] The method of claim 10, said non-IP packet  
2       data including data specific to a task generating said non-  
3       IP packet data.

1       13. [Original] The method of claim 10, said non-IP packet  
2       data including data specific to a task that will receive  
3       said IP packet.

1       14. [Original] The method of claim 11, said context data  
2       including packet arrival interface indicia.

15. [Canceled]

16. [Canceled]

17. [Canceled]

1       18. [Previously presented] A method for centralizing  
2       system-wide communication management and control within  
3       filter rules, comprising the steps of:

4               providing filter statements syntax for accepting  
5               parameters in the form of a selector, each selector  
6               specifying selector field, operator, and a set of  
7               values;

8               for an inbound packet, executing a look-ahead function  
9               within a protocol stack including an IP layer, a  
10          transport layer, a sockets layer, and an application  
11          layer and which, for said inbound packet, said IP layer  
12          provides to said transport layer said inbound packet,  
13          marked as non-deliverable, and receives back from said  
14          transport layer indicia, provided to said transport  
15          layer by said sockets layer, identifying the  
16          application layer application to which said packet  
17          would have been delivered by said sockets layer;

18              said selector referencing data that does not exist in  
19          IP packets;

20              processing said filter statements, including  
21          constructing and evaluating logical expressions of

22           arbitrary length, and selectively using a set of  
23           logical operators, alternative filter selector fields,  
24           and value set.

1       19. [Currently amended] The method of claim 18, wherein  
2       said protocol stack is a TCP/IP protocol stack, and said  
3       parameters selectively including userid, user profile, user  
4       class, user group, user group authority, user special  
5       authority, job name, process name, job group, job class, job  
6       priority, other job or process attributes, and date & time.

1       20. [Currently amended] The method of claim 18, wherein  
2       said protocol stack is a TCP/IP protocol stack, and said  
3       filters statements being provided within a user interface to  
4       said system.

1       21. [Currently amended] The method of claim 18, wherein  
2       said protocol stack is a TCP/IP protocol stack, and further  
3       comprising the steps of:

4           establishing a tunnel between two IP address limiting  
5           traffic to applications bound to ports at each end of  
6           said tunnel;

7           said filtering code accessing filtering attributes

8           further limiting traffic selectively to job indicia;

9           and

10          operating said filtering code within a kernel filtering  
11          function upon encountering a filter selector field  
12          referencing kernel data not included in said traffic.

1        22. [Currently amended] A method for traversing a portion  
2        only of a protocol stack to disallow selective IP packet  
3        traffic, comprising the steps of:

4           receiving a packet in the kernel of the operating  
5           system of a first node from an application, said kernel  
6           including a filter processor; said filter processor for  
7           constructing and evaluating logical expressions of  
8           arbitrary length, said logical expressions selectively  
9           including a set of logical operators, alternative  
10          filter selector fields, and value set;

11          for inbound packet processing to a first node from a  
12          second node, executing a look-ahead function in the  
13          system kernel of said first node to determine a target  
14          application; said system kernel including a TCP/IP  
15          protocol stack including an IP layer, a transport  
16          layer, a sockets layer, and an application layer and

17       which, for said inbound packet, said IP layer provides  
18       to said transport layer said inbound packet, marked as  
19       non-deliverable, and receives back from said transport  
20       layer indicia identifying the application layer  
21       application to which said packet would have been  
22       delivered;

23       for both said inbound packet processing, and for  
24       outbound packet processing from said first node to said  
25       second node, executing within said kernel the steps of

26               processing said packet by determining a task ID;

27               responsive to said task ID, determining a  
28               corresponding work control block;

29               determining a user ID, process or job identifier  
30               from said work control block;

31               from the user ID, process or job identifier  
32               selectively determining attributes for said user  
33               process or job; and

34               passing said attributes to said filter processor  
35               for managing and controlling communication

36 traffic.

1 23. [Previously presented] A method for expressing access  
2 rules as filters, comprising the steps of:

3 providing a filter statements syntax for accepting  
4 parameters in the form of a selector, each selector  
5 specifying selector field, operator, and a set of  
6 values; and

7 said selector referencing data that does not exist in  
8 IP packets for controlling access to an application;

9 for an inbound IP packet, executing a look-ahead  
10 function within a protocol stack including an IP layer,  
11 a transport layer, a sockets layer, and an application  
12 layer and which, for said IP inbound packet, said IP  
13 layer provides to said transport layer said inbound IP  
14 packet, marked as non-deliverable, and receives back  
15 from said transport layer indicia, provided to said  
16 transport layer by said sockets layer, identifying the  
17 application layer application to which said packet  
18 would have been delivered; and

19 processing said filter statements by constructing and

20 evaluating logical expressions of arbitrary length,  
21 said logical expressions selectively including a set of  
22 logical operators, alternative filter selector fields,  
23 and value set referencing said application layer  
24 application.

1 24. [Previously presented] A method for managing and  
2 controlling communication traffic by centralizing access  
3 rules in filters executing within and referencing data  
4 available in system kernels, comprising the steps for  
5 outbound packet processing from a first node to a second  
6 node of:

7 receiving said packet in the kernel of the operating  
8 system of said first node from an application or  
9 process at said first node;

10 processing said packet by determining a task ID;

11 responsive to said task ID, determining a corresponding  
12 work control block;

13 responsive to said work control block, determining a  
14 process or job identifier;

15 responsive to said process or job identifier,  
16 determining job or process attributes; and  
  
17 executing said filters by constructing and evaluating  
18 logical expressions of arbitrary length, said logical  
19 expressions selectively including a set of logical  
20 operators, alternative filter selector fields, and  
21 value set.

1 25. [Previously presented] The method of claim 24, further  
2 comprising the steps for inbound packet processing from said  
3 second node to said first node of:

4 initially operating said kernel at said first node to  
5 determine a target application for said packet at said  
6 first node by executing a look-ahead function within a  
7 protocol stack including an IP layer, a transport  
8 layer, a sockets layer, and an application layer and  
9 which, for said inbound packet, said IP layer provides  
10 to said transport layer said inbound packet, marked as  
11 non-deliverable, and receives back from said transport  
12 layer indicia, provided to said transport layer by said  
13 sockets layer, identifying the application layer  
14 application to which said packet would have been  
15 delivered;.

26. [Canceled]

27. [Canceled]

28. [Canceled]

1       29. [Currently amended] A method for managing and  
2       controlling communication traffic by centralizing the access  
3       rules, comprising the steps for outbound packet processing  
4       from a first node to a second node of:

5           receiving said packet in the kernel of the operating  
6           system of said first node from an application or  
7           process at said first node, said kernel including a  
8           filter processor for constructing and evaluating  
9           logical expressions of arbitrary length, said logical  
10          expressions selectively including a set of logical  
11          operators, alternative filter selector fields, and  
12          value set;

13           processing said packet within a TCP/IP stack;

14           by determining a task ID;

15           responsive to said task ID, determining a  
16           corresponding work control block;

17           determining a user ID control block from said work  
18           control block;  
  
19           from the user ID control block determining  
20           attributes for said user; and  
  
21           passing said attributes to said filter processor  
22           for managing and controlling communication  
23           traffic.

1       30. [Currently amended] The method of claim 29, further  
2       comprising the steps for inbound packet processing from said  
3       second node to said first node of:

4           initially operating said kernel at said first node to  
5           determine a target application for said packet at said  
6           first node by executing a look-ahead function within a  
7           protocol said TCP/IP protocol stack including an IP  
8           layer, a transport layer, a sockets layer, and an  
9           application layer and which, for said inbound packet,  
10          said IP layer provides to said transport layer said  
11          inbound packet, marked as non-deliverable, and receives  
12          back from said transport layer indicia, provided to  
13          said transport layer by said sockets layer, identifying  
14          the application layer application to which said packet

15 would have been delivered.

31. [Canceled]

32. [Canceled]

33. [Canceled]

1 34. [Previously presented] A method for control and  
2 management of communication traffic with respect to a system  
3 node, comprising the steps of:

4 receiving at said system node an inbound packet; and

5 executing within a protocol stack of the system kernel  
6 of said system node a filtering function identifying  
7 for said inbound packet a filter referencing non-packet  
8 data, and constructing and evaluating logical  
9 expressions of arbitrary length, said logical  
10 expressions selectively including a set of logical  
11 operators, alternative filter selector fields, and  
12 value set; and

13 responsive to said filter, executing a look-ahead  
14 function for identifying a target application for said  
15 inbound packet; said look-ahead function executed  
16 within a protocol stack including an IP layer, a

17           transport layer, a sockets layer, and an application  
18         layer and which, for said IP inbound packet, said IP  
19         layer provides to said transport layer said inbound  
20         packet, marked as non-deliverable, and receives back  
21         from said transport layer indicia, provided to said  
22         transport layer by said sockets layer, identifying the  
23         application layer application to which said packet  
24         would have been delivered;.

1         35. [Currently amended] The look-ahead function of the  
2         method of claim 34 wherein said protocol stack is a TCP/IP  
3         protocol stack, and further comprising the steps of:

4           passing to a transport layer function identified by an  
5         IP header a packet marked non-deliverable for  
6         determining which user-level process or job is to  
7         receive said packet;

8           receiving from said transport layer an application  
9         layer task identifier for said user-level process or  
10        job; and thereafter

11          passing said packet marked by said task identifier to  
12         said transport layer for delivery to said application  
13         layer task.

1       36. [Currently amended] System for control and management  
2       of communication traffic, comprising:

3           a system kernel including a filter function and stack  
4           data;

5           said filter function including a filter selectively  
6           referencing said stack data for expressing access  
7           rules;

8           said filter function being responsive to receipt of an  
9           outbound packet for determining a source application;

10          said filter function being responsive to receipt of an  
11          inbound packet processing for executing a look-ahead  
12          function within a TCP/IP protocol stack to determine a  
13          target application; said protocol stack including an IP  
14          layer, a transport layer, a sockets layer, and an  
15          application layer and which, for said inbound packet,  
16          said IP layer provides to said transport layer said  
17          inbound packet, marked as non-deliverable, and receives  
18          back from said transport layer indicia, provided to  
19          said transport layer by said sockets layer, identifying  
20          the application layer application to which said packet

21       would have been delivered; and

22       said filter function being responsive to said source or

23       target application for executing filter processing

24       including constructing and evaluating logical

25       expressions of arbitrary length, said logical

26       expressions selectively including a set of logical

27       operators, alternative filter selector fields, and

28       value set.

1       37. [Previously presented] A system for control and

2       management of aspects of communication traffic within

3       filtering, comprising:

4       a system kernel;

5       a protocol stack including an IP layer, a transport

6       layer, a sockets layer, and an application layer for

7       executing within said system kernel, responsive to an

8       inbound IP packet, a look-ahead function by which said

9       IP layer provides to said transport layer said inbound

10      IP packet, marked as non-deliverable, and receives back

11      from said transport layer indicia, provided to said

12      transport layer by said sockets layer, identifying the

13      application layer application to which said packet

14       would have been delivered; and  
  
15       filtering code within said system kernel operable with  
16       respect to non-IP packet data accessed within said  
17       system kernel outside of said protocol stack for  
18       controlling and managing said aspects of communication  
19       traffic; said filter code for constructing and  
20       evaluating logical expressions of arbitrary length,  
21       said logical expressions selectively including a set of  
22       logical operators, alternative filter selector fields,  
23       and value set.

1       38. [Previously presented] A system for centralizing  
2       system-wide communication management and control within  
3       filter rules, comprising:  
  
4       filter statements having a syntax for accepting  
5       parameters in the form of a selector, each selector  
6       specifying selector field, operator, and a set of  
7       values;  
  
8       said selector referencing data that does not exist in  
9       IP packets;  
  
10      a look-ahead function within a protocol stack including

11       an IP layer, a transport layer, a sockets layer, and an  
12       application layer which, for an inbound packet, said IP  
13       layer provides to said transport layer said inbound  
14       packet, marked as non-deliverable, and receives back  
15       from said transport layer indicia, provided to said  
16       transport layer by said sockets layer, for identifying  
17       the application layer application to which said packet  
18       would have been delivered; and

19       a filter processor for constructing and evaluating  
20       filter statements including logical expressions of  
21       arbitrary length, said logical expressions selectively  
22       including a set of logical operators, alternative  
23       filter selector fields, and value set.

1       39. [Currently amended] A system for traversing a portion  
2       only of a TCP/IP protocol stack to disallow selective IP  
3       packet traffic, comprising:

4       a system kernel;

5       a filter processor executing within said system kernel  
6       for constructing and evaluating logical expressions of  
7       arbitrary length, said logical expressions selectively  
8       including a set of logical operators, alternative

9               filter selector fields, and value set;

10              said filter processor responsive to an inbound packet  
11              for executing a look-ahead function for determining a  
12              target application; said look-ahead function operating  
13              within [[a]] said TCP/IP protocol stack including an IP  
14              layer, a transport layer, a sockets layer, and an  
15              application layer and which, for said IP inbound  
16              packet, said IP layer provides to said transport layer  
17              said inbound IP packet, marked as non-deliverable, and  
18              receives back from said transport layer indicia,  
19              provided to said transport layer by said sockets layer,  
20              identifying the application layer application to which  
21              said packet would have been delivered;

22              said filter processor responsive to both inbound and  
23              outbound packets for

24              processing said packet by determining a task ID;

25              responsive to said task ID, determining a  
26              corresponding work control block;

27              determining a user ID, process or job identifier  
28              from said work control block;

29           from the user ID, process or job identifier  
30           selectively determining attributes for said user  
31           process or job; and

32           passing said attributes to said filter processor  
33           for managing and controlling communication  
34           traffic.

1       40. [Previously presented] A system for expressing access  
2       rules as filters, comprising:

3           filter statements for accepting parameters in the form  
4           of a selector, each selector specifying selector field,  
5           operator, and a set of values;

6           said selector referencing data that does not exist in  
7           IP packets for controlling access to an application;

8           a look-ahead function executing within a protocol stack  
9           including an IP layer, a transport layer, a sockets  
10          layer, and an application layer and which, for an  
11          inbound packet, said IP layer provides to said  
12          transport layer said inbound packet, marked as non-  
13          deliverable, and receives back from said transport  
14          layer indicia, provided to said transport layer by said

15       sockets layer, identifying the application layer  
16       application to which said packet would have been  
17       delivered; and

18       a filter processor for constructing and evaluating said  
19       filter statements as logical expressions of arbitrary  
20       length, each said logical expression selectively  
21       including said operator selected from a set of logical  
22       operators, alternative filter selector fields, and  
23       value set.

1       41. [Currently amended] A system for managing and  
2       controlling communication traffic by centralizing access  
3       rules in filters executing within and referencing data  
4       available in system kernels, comprising:

5       a computer readable medium;

6       first code for receiving a packet in the kernel of the  
7       operating system of a first node from an application or  
8       process at said first node; said kernel responsive to  
9       an inbound packet, for executing a look-ahead function  
10      within a TCP/IP protocol stack including an IP layer, a  
11      transport layer, a sockets layer, and an application  
12      layer and which, for said inbound packet, said IP layer

13 provides to said transport layer said inbound IP  
14 packet, marked as non-deliverable, and receives back  
15 from said transport layer indicia, provided to said  
16 transport layer by said sockets layer, identifying the  
17 application layer application to which said packet  
18 would have been delivered;

19 second code for processing said packet by determining a  
20 task ID;

21 third code responsive to said task ID for determining a  
22 corresponding work control block;

23 fourth code responsive to said work control block for  
24 determining a process or job identifier;

25 fifth code responsive to said process or job identifier  
26 for determining job or process attributes;

27 sixth code for executing said filters by constructing  
28 and evaluating logical expressions of arbitrary length,  
29 said logical expressions selectively including a set of  
30 logical operators, alternative filter selector fields,  
31 and value set; and wherein

32       said first, second, third, fourth, fifth, and sixth  
33       code is recorded on said computer readable medium.

42. [Canceled]

1       43. [Previously presented] A system for control and  
2       management of communication traffic with respect to a system  
3       node, comprising:

4           a filtering function executing within a protocol stack  
5           of the system kernel of said system node identifying  
6           for an inbound packet a filter referencing non-packet  
7           data; and

8           a look-ahead function responsive to said filter for  
9           identifying a target application for said inbound  
10          packet; said look-ahead function functioning within a  
11          protocol stack including an IP layer, a transport  
12          layer, a sockets layer, and an application layer and  
13          which, for said inbound packet, said IP layer provides  
14          to said transport layer said inbound packet, marked as  
15          non-deliverable, and receives back from said transport  
16          layer indicia, provided to said transport layer by said  
17          sockets layer, identifying the application layer  
18          application to which said packet would have been

19 delivered;; and

20 a filter processor for constructing and evaluating  
21 logical expressions of arbitrary length, said logical  
22 expressions selectively including a set of logical  
23 operators, alternative filter selector fields, and  
24 value set.

44. [Canceled]

1 45. [Previously presented] A computer program product for  
2 control and management of aspects of communication traffic  
3 within filtering, said computer program product comprising:

4 a computer readable medium;

5 first program instructions to receive IP packet data  
6 into a TCP/IP protocol stack executing within a system  
7 kernel including, for processing an inbound IP packet,  
8 a look-ahead function within a protocol stack including  
9 an IP layer, a transport layer, a sockets layer, and an  
10 application layer and which, for said IP inbound  
11 packet, said IP layer provides to said transport layer  
12 said inbound IP packet, marked as non-deliverable, and  
13 receives back from said transport layer indicia,

14       provided to said transport layer by said sockets layer,  
15       identifying the application layer application to which  
16       said packet would have been delivered;

17       second program instructions to execute filtering code  
18       within said system kernel with respect to non-IP packet  
19       data accessed within said system kernel outside of said  
20       TCP/IP protocol stack by constructing and evaluating  
21       logical expressions of arbitrary length, said logical  
22       expressions selectively including a set of logical  
23       operators, alternative filter selector fields, and  
24       value set; and wherein

25       said first and second program instructions are recorded  
26       on said medium.

1       46. [Previously presented] A computer program product for  
2       centralizing system-wide communication management and  
3       control within filter rules, said computer program product  
4       comprising:

5       a computer readable medium;

6       first program instructions to execute filter statements  
7       having a syntax for accepting parameters in the form of

8           a selector, each selector specifying selector field, a  
9           logical operator selected from a set of a plurality of  
10          logical operators, and a set of values; and

11          second program instructions to cause said selector to  
12          reference data that does not exist in IP packets, said  
13          data including application layer indicia obtained for  
14          an incoming packet by a look-ahead function; said look-  
15          ahead function executing within a protocol stack  
16          including an IP layer, a transport layer, a sockets  
17          layer, and an application layer and which, for said IP  
18          inbound packet, said IP layer provides to said  
19          transport layer said inbound IP packet, marked as non-  
20          deliverable, and receives back from said transport  
21          layer indicia, provided to said transport layer by said  
22          sockets layer, identifying the application layer  
23          application to which said packet would have been  
24          delivered; and wherein

25          said first and second program instructions are recorded  
26          on said medium.

1        47. [Previously presented] A computer program product for  
2        managing and controlling communication traffic by  
3        centralizing access rules in filters executing within and

4 referencing data available in system kernels, said computer  
5 program product comprising:

6 a computer readable medium;

7 first program instructions to receive said packet in  
8 the kernel of the operating system of said first node  
9 from a process at said first node;

10 second program instructions to process said packet by  
11 determining a task ID;

12 third program instructions, responsive to said task ID,  
13 to determine a corresponding work control block;

14 fourth program instructions, responsive to said work  
15 control block, to determine a process or job  
16 identifier;

17 fifth program instructions, responsive to said process  
18 or job identifier, to determine job or process  
19 attributes; and

20 sixth program instructions to execute a filter  
21 processor for constructing and evaluating logical

22       expressions of arbitrary length, said logical  
23       expressions selectively including a set of logical  
24       operators, alternative filter selector fields, and  
25       value set; and wherein

26       said first, second, third, fourth, fifth, and sixth  
27       program instructions are recorded on said medium.

1       48. [Currently amended] The computer program product of  
2       claim 47, wherein said protocol stack is a TCP/IP protocol  
3       stack, and said computer program product further comprising  
4       for inbound packet processing from said second node to said  
5       first node:

6       sixth program instructions to initially operate said  
7       kernel at said first node to determine a target  
8       application for said packet at said first node by  
9       executing a look-ahead function within a protocol stack  
10      including an IP layer, a transport layer, a sockets  
11      layer, and an application layer and which, for said IP  
12      inbound packet, said IP layer provides to said  
13      transport layer said inbound IP packet, marked as non-  
14      deliverable, and receives back from said transport  
15      layer indicia, provided to said transport layer by said  
16      sockets layer, identifying the application layer

17 application to which said packet would have been  
18 delivered;; and wherein

19 said sixth program instructions are recorded on said  
20 medium.

1 49. [Currently amended] A computer program product for  
2 control and management of communication traffic, comprising:

3 a computer readable medium;

4 first program instructions for expressing access rules  
5 as filters referencing system kernel data;

6 second program instructions, for outbound processing,  
7 for determining a source application;

8 third program instructions, for inbound packet  
9 processing, for executing a look-ahead function to  
10 determine a target application; said look-ahead  
11 function operating within a protocol stack including an  
12 IP layer, a transport layer, a sockets layer, and an  
13 application layer and which, for said IP inbound  
14 packet, said IP layer provides to said transport layer  
15 said inbound IP packet, marked as non-deliverable, and

16           receives back from said transport layer indicia,  
17           provided to said transport layer by said sockets layer,  
18           identifying the application layer application to which  
19           said packet would have been delivered;

20           fourth program instructions, selectively responsive to  
21           said source and target application, for executing  
22           filter processing including constructing and evaluating  
23           logical expressions of arbitrary length, said logical  
24           expressions selectively including a set of logical  
25           operators, alternative filter selector fields, and  
26           value set;[[;]] and wherein

27           said first, second, third, and fourth program  
28           instructions are recorded on said computer readable  
29           medium.

1       50. [Previously presented] A computer program product for  
2       control and management of aspects of communication traffic  
3       within filtering, comprising:

4           a computer readable medium;

5           first program instructions for receiving IP packet data  
6           into a TCP/IP protocol stack executing within a system

7           kernel;

8       second program instructions for executing filtering  
9       code within said system kernel with respect to non-IP  
10      packet data accessed within said system kernel outside  
11      of said TCP/IP protocol stack; said filtering code  
12      constructing and evaluating logical expressions of  
13      arbitrary length, said logical expressions selectively  
14      including a set of logical operators, alternative  
15      filter selector fields, and value set; and wherein

16     said first and second program instructions are recorded  
17     on said computer readable medium.

1       51. [Currently amended] A computer program element for  
2       centralizing system-wide communication management and  
3       control within filter rules, comprising:  
  
4       a computer readable medium;  
  
5       first program instructions for providing filter  
6       statements syntax for accepting parameters in the form  
7       of a selector, each selector specifying selector field,  
8       a logical operator, and a set of values,

9           second program instructions for executing filtering by  
10          constructing and evaluating logical expressions of  
11          arbitrary length, said logical expressions selectively  
12          including said logical operator selected from a set of  
13          logical operators, at least one said selector field,  
14          and at least one said value;  
  
15          said selector referencing data that does not exist in  
16          IP packets including data obtained, for an inbound IP  
17          packet, by executing a look-ahead function within a  
18          protocol stack including an IP layer, a transport  
19          layer, a sockets layer, and an application layer and  
20          which, for said IP inbound packet, said IP layer  
21          provides to said transport layer said inbound IP  
22          packet, marked as non-deliverable, and receives back  
23          from said transport layer indicia, provided to said  
24          transport layer by said sockets layer, identifying the  
25          application layer application to which said packet  
26          would have been delivered;[[;]] and wherein  
  
27          said first and second program instructions are recorded  
28          on said computer readable medium.

1        52. [Previously presented] A computer program product for  
2        managing and controlling communication traffic by

3       centralizing access rules in filters executing within, and  
4       referencing data available in, system kernels, comprising:  
  
5           a computer readable medium;  
  
6           first program instructions for receiving said packet in  
7           the kernel of the operating system of said first node  
8           from an application or process at said first node;  
  
9           second program instructions for processing said packet  
10          by determining a task ID;  
  
11          third program instructions, responsive to said task ID,  
12          for determining a corresponding work control block;  
  
13          fourth program instructions, responsive to said work  
14          control block, for determining a process or job  
15          identifier;  
  
16          fifth program instructions, responsive to said process  
17          or job identifier, for determining job or process  
18          attributes;  
  
19          sixth program instructions for executing a filter  
20          processor for constructing and evaluating logical

21       expressions of arbitrary length, said logical  
22       expressions selectively including a set of logical  
23       operators, alternative filter selector fields, and  
24       value set; and wherein

25       said first, second, third, fourth, fifth, and sixth  
26       program instructions are recorded on said computer  
27       readable medium.

1       53. [Previously presented] The computer program product of  
2       claim 52, further comprising for inbound packet processing  
3       from said second node to said first node:

4       seventh program instructions initially operating said  
5       kernel at said first node to determine a target  
6       application for said packet at said first node by  
7       executing a look-ahead function within a protocol stack  
8       including an IP layer, a transport layer, a sockets  
9       layer, and an application layer and which, for said IP  
10      inbound packet, said IP layer provides to said  
11      transport layer said inbound IP packet, marked as non-  
12      deliverable, and receives back from said transport  
13      layer indicia, provided to said transport layer by said  
14      sockets layer, identifying the application layer  
15      application to which said packet would have been

16 delivered; and wherein  
17 said seventh program instructions are recorded on said  
18 computer readable medium.